

Claims

1. Method in a radio communication system using a logical control channel for transmitting control signaling messages from a base station to a mobile station during an ongoing call,
 - 5 characterized in that the method comprises the steps of:
 - transmitting from the base station at least one control signaling message using a first modulation scheme,
 - detecting that the mobile station has not properly received and
10 understood said message, and
 - re-transmitting said control signaling message using a second modulation scheme in response to said detecting step.
2. Method according to claim 1, characterized in that said logical control channel is transmitted on a traffic channel of said ongoing call using blank and burst.
15
3. Method according to claim 2, characterized in that said logical control channel is a Fast Associated Control Channel (FACCH).
20
4. Method according to claim 1, characterized in that said at least one control signaling message includes handover information.
5. Method according to any preceding claim, characterized in that
25 said first control channel modulation scheme is the 8-PSK modulation.
6. Method according to any preceding claim, characterized in that
said second control channel modulation scheme is the GMSK modulation.
- 30 7. Method according to any preceding claim, characterized in that
the first control channel modulation scheme involves a lower number of blanked speech frames than the second control channel modulation scheme.
8. Method according to any preceding claim, characterized in that
35 the first control channel modulation scheme is less robust than the second

control channel modulation scheme.

9. Method according to any preceding claim, characterized in that said detecting step includes detecting that no acknowledge message is received

5 by the base station confirming receipt of the control channel message.

10. Method according to any preceding claim, characterized in that said detecting step includes receiving by the base station a message indicating a failed handover.

10

11. Method according to any of claims 4-8, characterized in that said detecting step includes detecting that the mobile station continues to transmit on an old channel.

15

12. Method according to any preceding claim, characterized in that the method comprises the steps of:

detecting that the mobile station has not properly received and understood said message transmitted by use of said second modulation scheme, and re-transmitting said control signaling message using a third modulation scheme

20 in response to said detecting step.

13. Radio communication system comprising base stations (26), mobile stations (10) and a control unit (27) controlling at least one of said base stations, wherein the control unit controls the base station to transmit at least one control signaling message to a mobile station during an ongoing call using a logical control channel,

25 characterized in that the control unit further controls the base station to re-transmit said at least one control signaling message using a second modulation scheme in response to detecting that the mobile station has not 30 properly received and understood said message as transmitted using said first modulation scheme.

14. Radio communication system according to claim 13, characterized in that said control unit (27) is a Base Station Controller (BSC).

15. Radio communication system according to any of claims 13 or 14,
characterized in that said logical control channel is a blank and burst
channel.

5 16. Radio communication system according to any of claims 13 – 15,
characterized in that said at least one control signaling message
includes handover information.

10 17. Communication system according to any of claims 13-16,
characterized in that said control channel is a Fast Associated Control
Channel (FACCH).

15 18. Communication system according to any of claims 13-17,
characterized in that said first control channel modulation scheme is
the 8-PSK modulation.

19. Communication system according to any of claims 13-18,
characterized in that said second control channel modulation scheme
is the GMSK modulation.

20 20. Communication system according to any of claims 13-19,
characterized in that the first control channel modulation scheme
involves a lower number of blanked speech frames than the second control
channel modulation scheme.

25 21. Communication system according to any of claims 13-20,
characterized in that the first control channel modulation scheme is
less robust than the second control channel modulation scheme.

30 22. Communication system according to any of claims 13-21,
characterized in that the detection that the mobile station has not
properly received and understood said message includes that no acknowledge
message is received by the base station confirming receipt of the control channel
message.

23. Communication system according to any of claims 13-21,
characterized in that the detection that the mobile station has not
properly received and understood said message includes receiving by the base
station a message indicating a failed handover.

5

24. Communication system according to any of claims 13-21,
characterized in that the detection that the mobile station has not
properly received and understood said message includes that the mobile station
continues to transmit on an old channel.

10